IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Norman L. Holy
Serial Number:	10/516,900
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For:	WHALE-SAFE ROPE
Art Unit:	3643
Examiner:	Darren W. Ark
Atty doc:	147-04

DECLARATION UNDER 37 C.F.R § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

The undersigned, Norman L. Holy, states and declares as follows:

Background, Training and Relevant Experience:

1. I am the inventor of the Whale-Safe Rope which is the subject matter of the above-cited patent application and am President of Better Gear, LLC. the assignee of the invention.

2. I am a U.S. citizen and reside at 2223 Stackhouse Drive, Yardley, PA 19067.

3. I am a co-founder of Atlantic Gillnet Supply, which is the assignee of record for Acoustically Visible Fishing Net, U.S. patent 6,543,177; and I have been working in this art for about 10 years.

4. I am an inventor on 15 issued U.S. patents, including US 6,543,177, three U.S. patents on polymeric blends and one U.S. patent on degradable polyamides. I am also the inventor on four published U.S. patent applications, including the above-cited present application.

5. Patents on which I am a named inventor include:

1 6,543,177 T Acoustically visible fishing net

2 6,087,442 T Polymeric blends
3 5,569,710 T Polymeric blends
4 5,502,106 T Polymeric blends
5 5,485,541 T Cured composite, processes and composition
6 5,457,144 T Degradable polyamides
7 5,453,476 T High solids copolymerization via in-situ isomerization
8 5,412,026 T High temperature aqueous polymerization process
9 5,406,641 T Flexible light pipe, cured composite and processes for preparation thereof
10 5,268,437 T High temperature aqueous polymerization process
11 4,585,900 T Hydrogenation of carboxylic acid compounds to aldehydes using Cu/YtO as catalyst
12 4,313,018 T Heterogeneous catalytic hydrogenation
13 4,288,369 T Production of cyclic ethers
14 4,238,358 T Heterogeneous catalytic hydrogenation
15 4,118,426 T Production of hydroxy ethers

6. Published patent applications on which I am a named inventor include:

1 20060191493 WHALE SAFE GROUNDLINE AND YARN AND FIBER THEREFOR
2 20050155271 Whale-safe rope
3 20050150152 Whale safe groundline
4 20020028857 Compostable, degradable plastic compositions and articles thereof

7. I hold a PhD degree in Chemistry from Purdue University.

8. I am a former full professor of chemistry at Western Kentucky University; a former research fellow at Rohm and Haas Company; and I am presently a research associate at the New England Aquarium.

9. I have had technical articles on polymers, polymer chemistry and polymer products published in the Journal of the American Chemical Society, in the Journal of the Acoustical Society of America, in the Canadian Journal of Chemistry, in the Journal of Organic Chemistry, and in other publications.

10. I have presented approximately 10 papers at ACS National Meetings, given approximately 15 talks at the National Marine Fisheries meetings, and 3 talks at the Right

Whale Consortium, and I was a winner of the first competition in "Smart Gear," sponsored by the World Wildlife Fund.

11. For ten years, I wrote the advances in technology section for a polymer newsletter that went to every major plastics company in the world.

12. I have been a consultant to the New England Aquarium which has responsibility to save the Right Whale from extinction. My ropes are being tested by the Maine Lobstermen's Association and in Canada in the Bay of Fundy (administered by the Dept of Fisheries and Oceans of Canada, St. Andrews, New Brunswick).

13. Each year I attend the international "By-Catch Conference," which focuses on all types of bycatch from fishing around the world. There are only 20 invitees from around the world. The primary focus of this group is dolphin, porpoise, and whale bycatch (kill).

14. I have been on various fishing boats which fish the Atlantic, including the Gulf of Maine, and the Bay of Fundy. I have inspected the structure and operation of rope hauler machinery on such fishing boats, filmed the hauling of my ropes, and have discussed equipment operation with the boat operators.

15. I have been in various factories in the United States, Canada, and Norway, which make polymer monofilament (line), yarn, net, and rope for fishing, trawling, longlines, gillnetting, and lobster trapping. I have inspected the structure and operation of equipment for making such monofilament, yarn, net and rope. I have discussed the operation of the manufacturing equipment, the manufacturing processes and the product. I have also corresponded with operators of similar factories in China, Taiwan, Portugal, Germany and Thailand about the manufacture of these products.

Opinion:

Based upon my education and experience, it is my professional opinion that the Examiner is in error regarding the following technical matters for the following reasons.

a) The Examiner is in error when he alleges that PP (polypropylene) and PE (polyethylene) cannot be blended directly without a compatibilizer.

I have done it. I have extruded a PP-PE mixture into monofilament without a compatibilizer. Also, Polysteel Atlantic Ltd., Edwardsville, NS, Canada (www.polysteel.ca) has done it for a commercial fishing/marine product sold in Canada and the United States. I have been at the Polysteel Atlantic Ltd factory and have witnessed the extrusion of a PP-PE mixture without a compatibilizer. The PP and PE pellets are fed directly into a single screw extruder to produce a PP-PE blended product without a compatibilizer. Polysteel's extruder mixes exceptionally well and the high draw ratio they use causes the polymers to unwind and orient parallel to each other. While at the factory my blend of PP-PE was extruded and it contained what I had hoped would be a de-compatibilizer. Unfortunately, the monofilaments formed with my blend did not delaminate as much as I hoped they would.

There are patents based upon coextrusion of polyethylene and polypropylene. Below is a sampling.

1) USPATFULL on STN

Electrobraid fence
US-----6341550 B1 20020129

"The non-conductive filaments can be chosen from a wide range of synthetic polymer fibres. It is possible to use filaments conventionally used in the manufacture of rope, either as monofilament or as a spun yarn. Preferred materials are polypropylene, polyamides and polyesters, as either monofilaments or spun yarns or co-extruded high strength polypropylene and polyethylene as a monofilament e.g. POLYSTEEL.TM. monofilament."

2) GBFULL COPYRIGHT 2007 Univentio on STN

TRACHEOSTOMA FILTER ASSEMBLY
GB-----2303553 A 19970226

"formed from a blend of polyester and viscose, and cover layers 36, for example a non-woven fabric made from polyolefin fibres (especially coextruded polypropylene and polyethylene). The fabric layers are held in a supporting frame 24 which is moulded in situ onto the fabric. The supporting. . . "

3) USPATFULL on STN

Fiber reinforced building materials

US-----5993537 19991130
"In a recent experiment, it was demonstrated that 3000 denier Polysteel.TM. fiber (available from East Coast Rope, Ltd., North Sydney, Nova Scotia), comprised of polyethylene/polypropylene copolymer with a mass of about 7.5 grams per denier, a specific gravity of about 0.94 and a stretch elongation."

4) USPATFULL on STN

Micro-diastrophic synthetic polymeric fibers for reinforcing matrix materials

US-----6197423 B1 20010306

"least one synthetic polymer (e.g., a polyolefin) and more preferably a "multipolymer" blend which comprises two or more polymers e.g., polypropylene and polyethylene; polypropylene and polystyrene). While exemplary fibers of the invention may comprise a single polymer such as polypropylene, the more preferred embodiments may comprise monofilaments which have two or more polymers, such as polypropylene and polyethylene, or other polymers having different moduli of elasticity. A suitable multipolymer blend fiber is disclosed, for example, in. . . . Exemplary fiber material is also commercially available from East Coast Rope Ltd., of Syndey, Nova Scotia, Canada, under the tradename "POLYSTEEL". Fibers which can be used in concrete, for example, includes any inorganic or organic polymer fiber which has the requisite. . . are synthetic materials such as polyolefins, nylon, polyester, cellulose, rayons, acrylics, polyvinyl alcohol, or mixture thereof. However, polyolefins such as polypropylene and polyethylene are preferred."

5) USPATFULL on STN

Fiber reinforced building materials

US-----6423134 B1 20020723
WO-----9946214 19990916

"In a preferred aspect of the invention, the fibrous network consists of the above-described polyethylene/polypropylene polymer blend exclusively and is not held together by any type of adhesive agent. Exemplary fibers of this type are made under the name of "Polysteel.TM." and are available in rope form from East Coast Rope Ltd., of Sydney, Nova Scotia, Canada.
What is claimed is:
17. A formulation according to claim 1, wherein said synthetic resin monofilaments comprise a blend of polypropylene and

polyethylene.

25. A formulation according to claim 2, wherein said synthetic resin monofilaments comprise a blend of polypropylene and polyethylene.

53. The article according to claim 5, wherein said synthetic resin monofilaments comprise a blend of polypropylene and polyethylene.

54. The fibrous material according to claim 9, wherein said synthetic resin monofilaments comprise a blend of polypropylene and polyethylene.

56. The fibrous material according to claim 9, wherein said synthetic resin monofilaments comprise a blend of polypropylene and polyethylene."

b) The Examiner is of the opinion that the rope shown by Erik Anderson in U.S. patent 5,913,670, FIG. 6, is suitable for use for the purposes of the present invention. The Anderson rope, FIG. 6, has a select weakened short section 63, as an alternative embodiment to his break-away link 20, formed by cutting-out a portion of the outermost sheath of the fiber bundles of the rope to yield a reduced cross-section with ragged edges as shown.

The ragged edge break-away link section 63 of the Anderson rope is not very suitable for any fishery use as the Anderson rope simply would not be satisfactorily handled by hauler machinery at the ragged edge break-away link section 63. It is my professional opinion, based upon my training and experience, that the Anderson rope would be degraded rapidly by hauler machinery and would soon break or unravel. It is not a practical solution to making a weak link.

Anderson places his weakened (break-away) section at a select location, or at select locations. The remaining portions of the Anderson rope constituting almost the entirety of the rope length remain at full strength. If the Anderson rope were to break, the remainder of the length of the rope, at full strength, would be available to entangle a whale.

c) The Examiner is now requiring more information at a level of knowledge well below that of one of ordinary skill in this art. Based on 20 years of extrusion experience, my visitation of

many factories, my discussions and correspondences with many factory engineers and operators, technicians, and my accumulated general knowledge of the industry, I can state that the following information is known generally in the industry and is in the possession of one of ordinary skill:

Level of Ordinary Skill:

The manufacture of thermoplastic polymer: monofilament (fishing) line; yarn for making polymeric (marine) rope; and such rope, includes an extrusion process (the use of extruders). Typical materials for manufacture are: nylon; polyethylene; and polypropylene. These raw materials are generally purchased in bulk, as pellets. When a blend is to be extruded, such as for example blending coloring particles into nylon 6-6, the blending can be accomplished by any of several known methods, among others: manual mixing in a container; paddle mixing during a conveying process; and tumble mixing, all being prior to feeding an extruder. The method of blending does not affect the product. It merely is a manufacturing choice.

Blending is mixing. Blending can also be done in an extruder, itself, using plural screw feeds. Raw material is fed into a hopper which feeds the extruder. If materials are to be blended in the extruder, then multiple hoppers and multiple extruder screws are employed. The heater in the extruder melts the material which is then forced through a die, whereupon the monofilaments/fibers are either cooled in awater bath or air-cooled, then drawn out in a ratio of from 4:1 to 14:1 and then wound onto a take-up spool.

Typically for rope manufacture the monofilaments are wound into a yarn, which is then twisted into rope. Whether product is made is distinct separate process steps, with spooling or aging or storing and reheating/re-extruding, or made in one continuous, uninterrupted process, is a manufacturing choice, which may or may not affect certain factors in the ultimate product. When modifications in process steps affect the outcome of the product, they should be identified. When they do not there is nothing to identify.

One of ordinary skill in this industry knows that pellet sizes, additive particle size, percentage concentration, draw rates, draw ratios, melt flow index values, molecular weight distribution, elongation, stiffness, flexure, tensile strength, are possible factors for consideration. Some are to be considered and others may not be depending upon the product being made.

The above-recited level of information is known to those who operate the various U.S. and foreign factories I have been in contact with, and it is a level of information possessed by one of ordinary skill in this art who is most nearly connected to make (and/or use) the invention.

e) It is my opinion that the Examiner has not laid a credible foundation, nor provided adequate support, for his above addressed allegations on insufficiency of disclosure.

Declaration:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: ___May 8, 2007 _____

Norman L. Holy